Incidental deliverables (manuals, reports, plans, and other written documentation) to be provided under this contract are identified in this Section J-A. Nothing contained in this Section J-A shall relieve the Contractor from furnishing data called for by, or under the authority of, other provisions of this contract, which are not identified and described in this Section J-A. The cost of data to be furnished in response to Section J-A is included in the firm-fixed price of the awarded contract.

J-A-1 SUBMITTALS

a. At the Pre-work Conference, the Contractor shall provide, for approval by the Contracting Officer, the following schedules of submittals:

(1) A schedule of all shop drawings and technical submittals required by the specifications and drawings. The schedule will indicate the specification or drawing reference requiring the submittal; the material, item or process for which the submittal is required; the "SD" number and identifying title of the submittal; the Contractor's anticipated submission date and the approval need date.

(2) A separate schedule of all other submittals required under the contract but not listed in the specifications or drawings. The schedule will indicate the contract requirement reference; the type or title of the submittal; the Contractor's anticipated submission date and the approval need date (if approval is required).

b. All submittals called for by the contract documents will be listed on one of the above schedules. If a submittal is called for but does not pertain to the contract work, the Contractor will include it in the applicable schedule and annotate it "N/A" with a brief explanation. Approval of the schedules by the Contracting Officer does not relieve the Contractor of supplying submittals required by the contract documents but which have been omitted from the schedules or marked "N/A".

c. Copies of both schedules will be re-submitted monthly annotated by the Contractor with actual submission and approval dates. When all items on a schedule have been finally approved, no further re-submittal of the schedule is required.

J-A-2 SHOP DRAWINGS

Pursuant to FAR clause 52.236-21 entitled "Specifications and Drawings for Construction"; the Contractor shall submit Shop Drawings as detailed below.

For purposes of this clause, the term “Shop Drawings” shall be construed to include all “Submittal Descriptions” (Type SD-01, SD-02, SD-03, etc., as required by project technical specifications) that are necessary to fully describe contractor supplied materials and

installation methods and demonstrate their compliance with the technical and performance requirements of the contract. Submittal Descriptions include drawings, design data, catalog cuts, descriptive literature, illustrations, schedules, performance and test data, and similar materials to be furnished by the contractor. The preparation and distribution requirements described herein apply to all such SD submittals except as noted in technical specifications or otherwise directed by the Contracting Officer.

(a) For Shop Drawing submittals relating to Fire Safety systems, transmit twelve (12) complete sets as follows: transmit four (4) sets to the Contracting Officer and transmit the remaining eight (8) sets to the Architect/Engineer (A/E) whose name and address shall be provided at the Pre-work Conference.

(b) For all other Shop Drawing submittals, transmit ten (10) sets as follows: transmit two (2) sets to the Contracting Officer and transmit the remaining eight (8) sets to the Architect/Engineer (A/E) whose name and address shall be provided at the Pre-work Conference.

(c) The shop drawing submittals shall be transmitted to the Contracting Officer and the A/E on the same day. Delivery to the A/E shall be by the equivalent of “next day” delivery service. The timestamp recorded by the Contracting Officer upon receipt from the Contractor shall be the record date.

(d) Four (4) sets shop drawings will be returned to the Contractor. These sets will be returned to the Contractor within **21 calendar days** of the record date with appropriate review and approval notations as described below.

On or before completion date of the contract, the Contractor shall submit to the Contracting Officer two complete sets of shop drawings, which incorporate all comments, annotations, conditions of approval and corrections. Both drawing sets are to be made from the same original

(e) The shop drawings shall be complete and detailed and shall contain all information required for checking without reference to material contained in other shop drawing transmittals. Partial submittals will not be accepted unless specifically approved by the Contracting Officer. Any partial submittals shall be so indicated and any outstanding submittal required to complete the package shall be identified.

(f) Shop drawings shall be submitted in a logical sequence that is duly coordinated with long lead-time procurements and with fabrication and construction schedules. Each set of shop drawings shall be accompanied by a

completed KSC shop drawing submittal form listing the specification or drawing reference requiring the shop drawing; the material, item or process for which the shop drawing is required and the "SD" number and identifying title of the shop drawing. The Shop Drawing form will be supplied by the Government.

(g) Shop drawings for certain systems (e.g. fire detection/suppression) must be submitted as soon as 30 days following contractor's Notice to Proceed, and associated as built drawings, software, programs and test procedures must be submitted up to 30 days prior to acceptance testing. See Shop Drawing and submittal references in project technical specifications for affected submittals and their respective deadlines.

(h) "Drawings" as opposed to "Shop Drawings" shall mean actual drawings, diagrams, layouts and schematics. "Drawings" fall under the more general term "Shop Drawings" which include other required materials.

(1) Drawings shall be uniform in size, nominally 24 by 36 inches, with a maximum size of 28 by 40 inches. All drawings shall have dark lines on a white background.

(2) Drawings shall be numbered in logical sequence. The Contractor may use his own numbering system. Each drawing shall bear the number of the submittal (e.g. First Submittal, Second Submittal, etc.) in a uniform location adjacent to the title block. The NASA contract number shall appear in the margin, immediately below the title block, for each drawing.

(3) A blank space, no smaller than 4 by 5 inches shall be reserved on the right hand half of each sheet for the Government disposition stamp.

(i) Review and approval notation will be as follows:

(1) Shop drawings marked "approved" authorize the Contractor to proceed with work covered by such drawings.

(2) Shop drawings marked "approved as noted" authorize the Contractor to proceed with the work covered provided he takes no exception to the corrections. The notes shall be incorporated on the shop drawings prior to submission of the final shop drawings.

(3) Shop drawings marked "returned for correction" require the Contractor to make the necessary corrections and revisions on the drawings and re-submit

them for approval in the same routine as before, prior to proceedings with any of the work depicted on the drawings.

(4) Shop drawings marked "not approved" or "disapproved" indicate noncompliance with the contract requirements and the shop drawings shall be re-submitted with appropriate changes. No item of work requiring a shop drawing shall be accomplished until the drawings are approved or approved as noted.

(5) The Contractor shall make any corrections required by the Contracting Officer. If the Contractor considers any correction or notation indicated on the returned shop drawings to constitute a change to the contract drawings or specifications; notice as required under the clause entitled "Changes" shall be given to the Contracting Officer.

(6) The Government's engineering review of Contractor's shop drawing submittal(s) is for general conformance with the design concept of the project and the information given in the contract documents. As such, approval of the shop drawings by the Contracting Officer shall not be construed as a complete check, but will indicate only that the general method of construction and detailing is satisfactory. The Contractor is solely responsible for the dimensions and design of adequate connection details; confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating the work with that of other trades and performing the work in a safe and satisfactory manner, and certifying that proposed products meet all technical specifications and all contractual provisions, especially those relating to the 'Buy American Act'. Corrections or comments made as part of the Government review do not relieve the Contractor from compliance with the requirements of the contract documents. Likewise, any approval of a Shop Drawing Submittal containing an unidentified deviation from the technical requirements of the applicable contract drawings, maps and specifications, shall not relieve the contractor from compliance with the technical requirements.

(j) If changes are necessary to approved shop drawings whether as a result of a contract change or for any other reasons, the Contractor shall make such revisions and resubmit the shop drawings in accordance with the procedures in paragraphs a. through c. above. No item of work requiring a shop drawings change shall be accomplished until the changed shop drawings are approved.

(k) Progress payments will not be made on materials and equipment that have been delivered to the job site but not approved on shop drawings.

J-A-3 RECORD DRAWINGS

(a) After completion of all construction and before final payment is made, the Contractor shall submit one complete set of full size blue line contract drawings with fully dimensioned changes shown in red pencil to the Contracting Officer.

(b) The Contractor shall verify all dimensions and Geographical Information System (GIS) data shown on the contract drawings. Civil discipline systems, such as site dimensions and elevations, underground utilities, manholes, access points, paving, etc. and systems requiring state certifications, such as stormwater systems, shall require verification by a registered Land Surveyor. As-built dimensions and GIS data shall be at the same level of detail as the contract drawings.

(c) All dimensional changes shall be reflected as corrected dimensions by striking through the dimension value with a single line and circling this change. A leader shall point from the actual, as-built dimension to the circled change. All utility routing and interface changes shall be reflected on the drawings to scale and defined with sufficient dimensions to be able to locate. Indicating by reference alone, for example to a change order number, will not be acceptable.

(d) These record drawings shall be maintained by the Contractor at the work site and shall be updated based on job progress to reflect all changes and deviations and actual routing of all field-routed utilities and services. All lines, letters, and details shall be sharp, clear, and fully legible. All additions to the drawings shall be precisely drawn to scale of the original drawing and their locations shall be dimensioned.

(e) **Final Systems Drawings For Wiring/Devices/Control Systems:**

(1) Final system drawings for wiring and control systems shall be prepared and submitted as described below, and in accordance with additional requirements as described in technical specifications.

(2) Record drawings shall be made available for Government review on a monthly basis at the job site. This monthly review of record drawings will be part of the monthly monetary progress review.

(3) Drawings for installation of wiring, devices and/or controls that require field routing must be red- lined, reproduced, verified for accuracy, and submitted for approval per the requirements set forth under the section entitled Shop Drawings herein a minimum of two weeks before requesting a final walk down of the following systems. These drawings shall be labeled "FINAL SHOP DRAWINGS". In addition to hardcopy reproductions, the final drawings submittals shall include electronic files in Intergraph or Microstation format or in a Computer Aided Design (CAD) format compatible with Intergraph or Microstation.

(4) Final Systems Drawings are required for:

(i) HVAC

(ii) Paging/Area Warning

(iii) Premise Wiring

(iv) Electrical control schematics and connection diagrams

(v) Elevators

(vi) Fire detection/suppression systems

(vii) Any other system involving wiring and controls, with the exception of facility lighting

(f) **Sewer System Certification:**

For all work involving sewer system installations or modifications, the Contractor shall provide to the Contracting Officer three (3) sets of drawings in the form of an As-Built Survey signed and sealed by a State of Florida Registered Land Surveyor for the sewer system. The as-built survey shall show all locations and invert elevations of the sewer system to verify that its placement is per contract drawings. The submittal shall be complete and sufficient for the Engineer's of Record certification to the Florida Department of Environmental Protection. The as-built survey level of detail shall be the same as shown in the contract drawings. If significant differences exist between the contract requirements and as-built conditions as evidenced by the survey, the differences shall be corrected and a new as-built survey made and submitted as before. Drawings shall be provided prior to the final inspection.

(g) Record drawings shall be made available for Government review on a monthly basis at the job site. This monthly review of record drawings will be part of the monthly monetary progress review.

J-A-4 PROGRESS SCHEDULES

Pursuant to FAR 52.236-15, entitled "Schedules for Construction Contracts," the Contractor shall:

(a) Prepare the Progress Schedule using standard commercially available scheduling software or comparable format such as a bar chart approved by the Contracting Officer.

(b) Submit the Progress Schedule, for approval by the Contracting Officer, at the Pre-Work Conference in four (4) copies. Include a copy of the electronic file if Progress Schedule is prepared using scheduling software. The approved initial progress schedule will be the baseline schedule for the project.

(c) Include no less than the following information on the Progress Schedule:

(1) Major headings for primary project scope broken out in accordance with the Divisions and/or Sections of the project specifications.

(2) Line item break-downs under each major heading sufficient to track the progress of the work.

(3) A line item showing contract finalization tasks which includes Punch List, Clean-up and Demobilization, and Final Construction Drawings.

(4) Appropriate level of detail under each line item or activity (compatible with the schedule of values) sufficient to track the cost and schedule performance, including scheduled vs. actual percentage complete for any given day within the contract performance period. (Progress schedules prepared using scheduling software shall include resource loaded activities [labor, material, and other resources), major deliveries, project milestones, etc.]. Bar Charts shall include, as a minimum, a materials bar and a separate labor bar for each line item.) Each element shall include the estimated cost and percentage weight of total contract cost. The labor element shall also show the number of workers expected to be working on any given date within the Contract Performance Period.

(5) Separate line items for Mobilization and Shop Drawing submittal and approval (these items are to show no associated costs).

(6) The progress schedule or bar chart shall indicate the file date and status date (data date).

(d) Update the progress schedule every **30 days** (unless specified otherwise)* throughout the Contract Performance Period and submit four copies (and electronic file as applicable) to the Contracting Officer for approval. Progress schedule updates shall be submitted concurrently with progress payment requests

J-A-5 SCHEDULING

The Contractor will be required to provide detailed scheduling information regarding planned operations to the Contracting Officer's designated representative for input to the **LC39 and Industrial Area** 72 hour/11-day operations schedule (a total of 14 days). This schedule input must be provided on a daily basis prior to 1:00 P.M. The schedule must show the Contractor's planned operations in detail for the next 3 days in hourly increments and in shift increments for the following 11 days.

All Contractor operations requiring support from KSC, such as outages or fire and safety standby, for hazardous operations, shall be identified.

J-A-6 MATERIAL SAFETY DATA SHEETS (MSDS) SUBMITTAL/CHEMICAL INVENTORY REPORTING AND MANAGEMENT

The Contractor shall provide a complete and accurate list, accompanied by the applicable Material Safety Data Sheets (MSDS), of all materials and chemicals listed on the Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-To-Know Act (EPCRA) and Section 112(r) of the Clean Air Act that will be stored onsite and/or used in the execution of this contract, regardless of the quantity. This information shall be provided to the Contracting Officer (CO) prior to the time of delivery of the materials and chemicals to the site. This inventory is to be updated and resubmitted to the CO on a monthly basis. All inventory reporting is to be completed on the Chemical Inventory for Construction Projects at Kennedy Space Center Form (8-313NS). Appropriate labels and MSDS shall be provided for all chemical shipments.

J-A-7 WASTE CHARACTERIZATION

KSC Form 26-551 "Process Waste Questionnaire" (PWQ) shall be prepared and processed for all waste streams generated during the execution of this project in accordance with article entitled "**Hazardous Wastes**"

J-A-8 SITE SPECIFIC SAFETY AND HEALTH PLAN

The successful offeror will be required to submit a site specific safety and health plan after contract award as requested by the Contracting Officer. The contractor shall tailor its site specific safety and health plan using The KSC Construction Contractor's Site Specific Safety and Health Information and Requirements Reference Manual (Attachment J-2) as a guide. **Notice to proceed with on-site contract work will not be granted until the contractor's site specific safety and health plan has been determined acceptable by the Contracting Officer.**

J-A-9 LIFTING PLAN AND RIGGING PLAN

A detailed Lifting and Rigging Plan shall be submitted by the Contractor 14 days prior to lifting operations. Lifting operations include work performed within requires the use of cranes or lifting equipment to include chokers, slings, and shackles used to move material, personnel, and equipment to/from heights in excess of 25 feet. One lifting and rigging plan may be submitted for multiple lifts using the same equipment by utilizing the most stringent applicable conditions. Four (4) copies of a detailed Lifting and Rigging Plan shall be submitted for approval to the Contracting Office using the enclosed form. The lifting plan shall address:

1. The specific crane(s) lifting and rigging equipment that will be on site
2. The maximum swing radius to be used and the degrees in relation to the crane, such as 360 degrees over the counterweight, tec.
3. A sketch of where the crane will be located in relation to where the loads will be situated.
4. The estimated maximum load weights
5. The type and weight of rigging to be used and how it will be configured
6. A copy of the crane capacity chart to be used.
7. A copy of all crane deductions.
8. Maximum crane boom to be used.
9. Counterweight configurations.
10. Certifications of the crane, operator, and rigging.
11. Certifications of rigging personnel.
12. General narrative description of lift operations, plan of approach, and safety measures to be implemented during the lifting operations.

PROJECT SPECIFIC KENNEDY SPACE CENTER REQUIREMENTS

The project specific Kennedy Space Center requirements supporting Contract Section I are identified in this Section J-B. Nothing contained in this Section J-B shall relieve the Contractor from complying with other requirements of this contract, which are not identified and described in this Section J-B.

J-B-1 UTILITY OUTAGE, ENERGIZED ELECTRICAL WORK, AND EXCAVATION PERMITS

(a) Utility Outage Requests and Electrical Work Permits

(1) Utility Outage Requests: All outages required during the prosecution of work which affect utility systems, such as electrical, water, fire detection and protection systems and air handling systems will require permits. Work shall be scheduled to hold outages to a minimum. Request for utility outage permits shall be made in writing to the Contracting Officer at least fourteen (14) working days in advance of the time required. The request shall state the system involved, area involved, approximate time of outage, and the nature of the work involved. The fact that the Contractor requests an outage for a specific time period does not necessarily mean that the outage will take place. Due to the nature of the operations at Kennedy Space Center, the Contractor probably will not know until the day before the requested date if the outage will take place as scheduled. All outages will take place outside regular working hours. The Contractor will not be entitled to additional payment for working irregular hours due to outages.

(2) Electrical Work Permits: Prior to beginning work on an electrical system under an approved outage, the Contractor shall obtain an executed Work Permit (form number KSC-26-400NS) from the Base Support contractor, and then execute complex lockout/tag-out procedures for all Work Permit related work as follows:

a. The Contractor's employee in charge of the required lockout/tag-out shall be present at the time the Government switches high-, medium-, or low-voltage circuits under Government access control which are to be locked and tagged out by the Contractor. The Contractor shall coordinate with the COTR for the required switching period time and date. Due to KSC operational considerations the switching period time and date may be at any time, and outside of normal working hours or work days.

b. Once Government switching is complete the Contractor's employee in charge of the lockout/tag-out shall sign the Work Permit and immediately install the required OSHA compliant lockout / tag-out on the required switching device(s). Once installed the Contractor's employee in charge of the lockout/tag-out shall individually note the locations of the locks and tags on the Work Permit form.

c. A lockout/tag-out lock box shall be used for all such lockout / tag-outs. The key(s) from the lock(s) installed by the Contractor's employee in charge of the lockout/tag-out shall be placed in the box and the employee in charge shall place an additional personal lock on the lock box to secure the keys inside. Lock box shall be kept at the work site and all other Contractor employees shall attach their personal lockout/tag-out on this box at any time they are working on the applicable equipment.

d. At the start of the first standard work period following the lockout/tag-out of a Government switched circuit for which a Work Permit is issued, the Contractor's employee in charge of the lockout/tag-out shall complete the required lockout/tag-out (lock box) procedures. Immediately upon completing the lockout/tag-out the Contractor shall verify no voltage is present on all circuit conductors using suitable testing equipment, safe work practices, and all required personal protective equipment. All other circuit safeguards such as grounding shall occur immediately after the voltage test and each safeguard shall be individually recorded on the Work Permit.

(b) Energized Electrical Work and Hazard Analysis

(1) Live parts to which an employee might be exposed shall be put into an electrically safe work condition before an employee works on or near them, unless the employer can demonstrate that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. If live parts are not placed in an electrically safe work condition (i.e., due to increased or additional hazards or infeasibility), work to be performed shall be considered energized electrical work. Safety plans, job hazard analysis, and work practices for work on or in proximity to energized parts shall be in

accordance with KNPR 8715.7, KSC Construction Contractor Safety and Health Practices Procedural Requirements

(2) Electrical Hazard Analysis:

Arc-flash and shock prevention personal protective equipment (PPE) is required for all energized electrical, work and where energized or exposed live parts may not be present, but a potential hazard exists including: manhole or cable vault/tray insulated cable inspections, circuit breaker or switch operation, and de-energized voltage checks to electrically safe equipment.

The Contractor shall provide a qualified electrical safety professional to perform an arc-flash and shock hazard analysis in accordance with NFPA 70E for all such electrical work. The analysis shall be submitted with the Contractor's Site Specific Safety Plan (SSSP) and referenced in any applicable Job Hazard Analysis (JHA). The safety professional shall perform and review a power system analysis using computer software specifically designed for the purpose to determine short circuit levels and arc flash hazard incident energy at all locations to be worked on by the Contractor. Table 130.7(C)(9) in NFPA 70E may be used in lieu of calculations when all applicable general notes for the table apply. The Government will provide source short circuit levels and clearing times for Government operated electrical source equipment as well as any applicable design information. The analysis shall include a table summarizing the results of the analysis with the following information for each location or piece of equipment:

i.) Protective Device Name
ii.) Protective Device Clearing Time
iii.) Maximum Voltage
iv.) Calculated Bolted Three Phase Fault Level.
v.) Calculated Bolted Ground Fault Level
vi.) Calculated Minimum Arcing Fault Level
vii.) Arc-Distance if applicable for the calculation.
viii.) Employee Working Distance
ix.) Calculated Arc-Flash Boundary
x.) Calculated Maximum Arc-Flash Incident Energy.
xi.) Arc-Flash PPE Category
xii.) Shock Prevention PPE Insulating Class
xiii.) Limited Approach Boundary
xiv.) Restricted Approach Boundary
xv.) Prohibited Approach Boundary

(3) Electrical Manhole / Vault Confined Space Requirements: Reference KNPR 8715.7, KSC Construction Contractor Safety and Health Practices Procedural Requirements. During the site specific safety plan submittal phase, the Contractor shall complete a hazard evaluation of confined space(s) ensuring all hazards associated with the space or that may be introduced to the space have been identified and mitigated. The Contractor's designated safety professional shall coordinate with the COTR to complete a confined space hazard assessment (KSC Form 28-750NS) in accordance with KNPR 1840.19 for each confined space, and to schedule a job-site inspection meeting with KSC Environmental Health and Safety personnel. Within 35 calendar days after this meeting the COTR will provide a confined space hazard assessment to the Contractor. This assessment must be complete prior to any manhole entry and will be used in generating the confined space entry permit(s) required for the project.

a. The contractor shall provide supplementary lighting for all manhole work.

(c) Excavation Permits

The Contractor shall request and obtain excavation permit(s) prior to performing any excavation. KSC Form 26-312V3 NS, Utility Locate/Excavation Permit Request, shall be prepared by the Contractor and submitted to the Government for approval at least 15 working days prior to the planned excavation date. The Contractor shall comply with the requirements of the Base Support Contractor's "Utility Locate / Excavation Permit Instruction" ENG-I-MP07 (latest revision), in the preparation, submission and use of the permit(s).

J-B-2 FIRE PROTECTION AND REQUIRED PERMITS

The KSC Fire Department will provide fire suppression, inspection and rescue services to the Contractor as necessary. The Contractor shall:

(a) Provide approved fire extinguishers of appropriate type for hazards involved.

(b) Report all fires to the Fire Service at 867-7911 or 867-1911.

(c) Comply with all requirements of KHB 1710.2C Section 504 (Heat Producing Devices) and NSS 1740.11 "NASA Safety Standard for Fire Protection" Section 702 and Chapter 8 for work performed at the Kennedy Space Center.

(d) Provide a fire watch in accordance with Federal OSHA Safety and Health Standards 29 CFR 1926.352/1910.252 when required by the welding and burning permitting official.

(e) Prevent false fire alarms by providing 24-hour advance notice to the Contracting Officer's Technical Representative (COTR) when construction activities in areas protected by fire alarm and/or detection systems may produce airborne particulates (smoke or dust) caused by construction activities such as painting, stripping, cutting drywall or concrete, sandblasting, and/or removing raised floor panels.

(f) Request permits for all welding and burning operations. Requests for these permits shall be made in writing to the Government at least seven (7) working days in advance of the time required.

(g) Report in the Contractor's Safety and Health Plan in accordance with NFS 1852.223-73 how it intends to comply with the above requirements.

J-B-3 PERMANENTLY INSTALLED SAFETY SYSTEMS

(a) The Contractor shall protect and in no way interrupt the service of any installed safety systems or personnel safety devices.

(b) In the event that the Contractor requires entrance into systems serving safety devices, the Contractor shall obtain prior approval from the Contracting Officer. In the event the Contractor determines that it is necessary to temporarily remove or render inoperable any personnel safety devices in order to accomplish contract requirements, the Contractor shall provide alternate means of protection prior to removing or rendering inoperable any permanently installed safety devices or equipment and shall obtain prior approval of the Contracting Officer.

J-B-4 BREATHING AIR COMPATIBILITY

(a) The contractor shall take precautions to assure that connectors used in contractor-supplied breathing air systems are incompatible with connectors present on either KSC gas systems or on contractor supplied systems that are used to supply non-respirable gases. KSC-STD-Z0008, 'Standard for Design of Ground Life Support Systems and Equipment', establishes requirements for connectors to be used in KSC facility breathing air and non-respirable gas systems. Facility breathing air systems located at KSC/CCAFS are to use a Hansen 3/8 inch quick disconnect as a breathing air distribution interface. KSC facility non-respirable gas systems are to use ¼ inch quick disconnects for gas distribution interfaces.

Although most facility systems were designed in accordance with this standard, there are nonconforming locations at KSC/CCAFS.

(b) The Contractor may use KSC facility breathing air systems, if available at the work location. The contractor shall perform a pre-work site inspection to identify coupling types in use at the work location before mobilizing or using any breathing air equipment. The contractor shall also submit a written certification to show the contractor's breathing air system has been recently inspected and meets Grade D breathing air standards. Alternately, the contractor may arrange for on-site testing of contractor-supplied breathing air by the Government at least five days prior to start of work. In addition, the contractor shall also provide a work site evaluation for the NASA Safety Office to review before using any breathing air system. The breathing air test and the safety inspection can be coordinated through the Contracting Officer, and will be at no cost to the contractor.

(c) The contractor shall tag or label connector ends of all lines and flexible hoses of contractor-provided breathing air or non-respirable gas distribution systems. The tags or labels will clearly identify the contents of the lines or hoses.

J-B-5 TRAFFIC RESTRICTIONS

(a) The Contractor shall not move oversized loads and/or slow moving vehicles on established roads within the Kennedy Space Center from 6:30 A.M. to 8:30 A.M. and 3:30 P.M. to 5:30 P.M. on week days. Other than the above restricted hours, the Contractor may move oversize and/or slow moving vehicles to the work site provided all requirements of the Florida State Highway Department have been met.

(b) Movement of any Contractor vehicle in excess of maximum width, height and length specified by Florida Statues Chapter 316 shall be accompanied by the Contractor's designated Convoy Commander. The Contractor's Convoy Commander shall be totally responsible for the oversized vehicular movement to include making a physical inspection for possible obstructions along the intended route and obtaining all required special permits.

J-B-6 STORAGE AND PROTECTION OF MATERIAL TO BE RE-USED

All items of material to be removed and re-installed by the Contractor shall be protected during removal and stored in a manner such that the material will not be damaged during removal or storage. Any material designated for re-use, which is not suitable due to the Contractor's damage, will be replaced by the Contractor at no additional cost to the Government. The contractor shall provide a description of the steps taken to comply with the requirements of this clause in their safety plan submittal.

J-B-7 MAINTENANCE OF GOVERNMENT EQUIPMENT

(a) Government systems and equipment in the Contractor's work area may require servicing, maintenance, or modification by Government support contractors during the contract performance period. This maintenance activity may include work on systems, including underground utilities, that connect with Contractor installed systems and equipment. The Contractor shall allow the Government support contractors into his work area to perform the maintenance work.

(b) Existing systems and equipment require periodic maintenance that cannot be readily defined in terms of frequency and duration. This maintenance will be coordinated with the Contractor through the Contracting Officer, and will be performed on a non-interference basis as much as possible. The Contractor shall notify the Contracting Officer regarding any uncoordinated maintenance activity.

(c) The Contractor shall arrange and conduct a joint pre-operations briefing with Government support contractor personnel on each occasion that the support contractor requires access to the contractor’s work area. The Contractor shall take the following steps as required to prevent collateral damage to, or interference with, Contractor installed systems and equipment.

(1) Verify the scope and limits of the support contractor’s planned maintenance activity.

(2) Advise the support contractor regarding the scope of the Contractor’s work that may be affected by the maintenance activity, including specific locations and dimensions of planned or installed facilities, systems and equipment. Notify the Contracting Officer immediately regarding any resulting conflicts or interferences.

(3) Ensure that temporary barriers or protective measures are provided as needed to protect Contractor installed work and preserve job-site safety.

The Contractor shall notify the Contracting Officer immediately regarding any issues that cannot be resolved with the support contractor.

J-B-8 AVIATION OBSTRUCTION LIGHTS

The Contractor will provide at least two Aviation Red Obstruction Lights or two High Intensity White Obstruction Lights on all structures over 100 feet above ground level. All construction cranes/booms shall be lighted regardless of height. Lights must be constructed and installed in accordance with U.S. Department of Transportation, Federal Aviation Administration publication AC 70/7460-1F (as revised), Chapter 4, paragraph 15, subparagraph e. Lights will be operated during all periods of reduced visibility, between sunset and sunrise, and as directed by the Contracting Officer.

J-B-9 INTERFERENCES AND COORDINATION OF WORK

(a) The Contractor shall coordinate construction layout, systems configuration and work scheduling to avoid interference's between the various construction trades and their installations. Interferences and obstructions resulting from lack of Contractor coordination shall be corrected by the Contractor as approved by the Contracting Officer. All components, fittings and reworking necessary for such corrections shall be provided by the Contractor at no additional cost to the government. Dimensions shown for existing work, and all dimensions required for work that is to connect to existing work, shall be verified by the Contractor by actual field measurement of the existing work. Any work at variance with that specified or shown in the drawings shall not be performed by the Contractor until approved in writing by the Contracting Officer.

(b) To the extent possible, the as-built dimensions of all new work shall be verified by actual field measurement prior to ordering or fabricating mechanical, electrical, or specialty equipment and materials to be installed. If such field measurement is not possible, then the contract drawings and applicable shop drawings shall be checked by the contractor for dimensional accuracy prior to ordering or fabricating equipment and materials to ensure proper fit for field installation.

(c) The Contractor shall be responsible for correction of all field fitup problems and interferences which could have been avoided by field measurement or drawing checks prior to equipment fabrication.

J-B-10 RESTORATION OF GRASSED AREAS DISTURBED BY CONSTRUCTION

The Contractor shall, prior to completion of the contract, grass all areas disturbed by construction activities by seeding and mulching or, when erosion may occur, by sodding, except where specifically directed otherwise in the drawings and specifications.

J-B-11 TEMPORARY CONSTRUCTION TRAILERS

(a) The Government will provide a location for temporary office and/or storage facilities if needed for performance of on-site work under this contract. Specific location(s) at or reasonably close to the work site will be identified at the pre-work conference. The contractor is responsible for providing his own telephone service and for making his own connections to KSC utility services, if provided for under Article I-5.

(b) All temporary facilities must be structurally sound, in roadworthy condition, and shall be installed and anchored in accordance with KSC-PLN-1904, Trailer/Equipment Tie Down Plan for the John F. Kennedy Space Center; or Rules of Department of Highway Safety and Motor Vehicles, Division of Motor Vehicles Chapter 15C-1, whichever is more stringent. Copies of the standards will be made available to the contractor at the pre-work conference. The contractor shall provide written certification of compliance for all temporary facilities to the Contracting Officer within three days of installation. Any facilities that fail to meet these requirements shall be immediately removed from Government property.

(c) All temporary facilities shall be removed from government property within two weeks following final acceptance of work performed under this contract.

J-B-12 CONFINED SPACE WORK REQUIREMENTS

(a) Special requirements, coordination, and precautions will apply to any contract work taking place in confined spaces. Each contractor contracted to perform work in confined spaces is required to provide a written program for such work as part of its health and safety plan which is consistent with the requirements of 29 CFR 1910.146. For work in telecommunications manholes, provisions of 29 CFR 1910.268(o) are also applicable. The contractor shall coordinate any such work in confined spaces with the KSC Environmental Health Support Contractor, KSC Fire Services Support Contractor, and any other resident government or contractor organization whose employees may have access to the work location. The provision of Environmental Health services by the government does not prohibit the contractor from providing their own atmospheric testing. Government provided services include environmental health monitoring and consultation support for testing of atmospheres in confined spaces as well as fire rescue and emergency medical services.

(b) Entry into and work in confined spaces shall be in accordance with the requirements of KNPR 1820.4, “KSC Respiratory Protection Program,” KNPR 1840.19, “KSC Industrial Hygiene Handbook,” and all other applicable clauses of this contract.

(c) Confined spaces, which contain water, shall be pumped out by the contractor prior to scheduling a confined space entry check.

(d) In addition to the requirements set forth above, the Contractor shall notify and obtain approval from the Power Coordinator, telephone 321-867-7300, and/or from Communications Control, telephone 321-867-4141, respectively, prior to performing work in electrical and/or communications manholes.

J-B-13 TESTING OF CONSTRUCTION MATERIALS

Tests of construction materials indicated to be performed by the Contractor shall be accomplished by the Contractor utilizing the services of an acceptable independent testing laboratory.

J-B-14 AFFIRMATIVE PROCUREMENT

Affirmative Procurement (AP) is the purchase of environmentally friendly products and services (i.e. products made from recycled or recovered materials). Federal agencies, their Contractors and subcontractors are required to maximize the purchase materials on the list of "EPA Designated Guideline Items" with the minimum recycled or recovered materials content whenever practicable according to RCRA 6002 and EO 13101. The requirements of RCRA 6002 include the following: "The decision not to procure such items shall be based on a determination that such procurement items:

(A) are not reasonably available within a reasonable period of time

(B) fail to meet the performance standards set forth in the applicable specifications or fail to meet the reasonable performance standards of the procuring agencies and/or

(C) are only available at an unreasonable price.

Any determination under subparagraph (B) shall be made on the basis of the guidelines of the National Institute of Standards and Technology in any case in which such material is covered by such guidelines."

The Contractor shall provide AP approved items as specified within the contract documents. Submittals for AP items shall be provided for approval in accordance with Shop Drawing provisions. If the Contractor proposes to substitute an item that does not conform with AP requirements, the applicable Shop Drawing shall be accompanied by KSC Form 8-69, Contractor Request to Use Nonconforming Parts or Material (Deviation/Waiver Request) identifying the reason for the proposed substitution.

Non-conforming items without approved D/W's will be rejected and the contractor shall be responsible for any costs and schedule impacts associated with replacing such non-conforming items at no additional cost to the Government.

At the conclusion of the project, the Contractor shall provide the Contracting Officer (CO) with a report itemizing all AP items used.

Detailed information on the EPA AP specified/approved products and manufacturers providing these products is available at www.epa.gov/cpg/products.htm.

J-B-15 WEEKLY STATUS MEETING

The Contractor shall attend a weekly progress/status meeting to be scheduled by the Contracting Officer OR Contracting Officer's Technical Representative (COTR) for the purpose of determining progress status, delaying factors, material delivery schedules, and status of shop drawing submittals. In addition, a representative of each first tier subcontractor may be required to be present for the conference.

J-B-16 SUPERINTENDENT ASSIGNMENT

Pursuant to clause 52.236-6, entitled "Superintendence by the Contractor," any assigned superintendent must be a full-time employee of the Contractor and be 100 percent committed to superintending the work required by this contract. The superintendent shall not fill any other positions in performance of this contract.

J-B-17 CONCRETE WASHOUT/NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

CONCRETE WASHOUT

The Contractor shall not allow wastewater from standard concrete construction activities (such as on-site material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, forms, directional drilling, etc.) to enter waterways or to be discharged before being treated to remove pollutants.

The Contractor shall dispose of the construction-related concrete wastewater and concrete excess by collecting and placing it in a contractor constructed settling pond where suspended material can be settled out and/or the water can evaporate to separate solids from the water. The location of the settling pond shall be coordinated with and approved by the Contracting Officer (CO). The Contractor shall remove and dispose of the residue left in the pond and restore site to original condition. Disposal of solidified concrete shall be performed in accordance with the solid waste article.

J-B-18 DEWATERING/CONSUMPTIVE USE PERMIT (CUP)

Dewatering operations (including manhole dewatering) shall be conducted in accordance with the most current St. Johns River Water Management District (SJRWMD) "Notice General Construction Dewatering Permit, Chapter 40C-22, F.A.C." If the dewatering operation will exceed 300,000 gallons per day (GPD) or thirty (30) days duration, the Contractor shall submit the Notice to District of Dewatering Activity RDS-50 Form fourteen (14) days prior to dewatering activities. The Contractor shall submit the required information to the Contracting Officer (CO) or his designee and provide a copy to the NASA Environmental Assurance Branch (EAB), TA-B1B. NASA EAB, TA-B1B will notify SJRWMD of the Contractor's intended dewatering operation. No dewatering may take place until authorized by the CO.

J-B-19 TOXIC METALS

Representative samples of painted surfaces within the project area have been identified to contain toxic metals. The Contractor shall assess hazards and brief government of their proposed methods of removal and disposal of building materials identified as having toxic coatings and hazardous materials. The Contractor's hazard assessment shall be conducted by a competent health and safety professional. The Contractor shall notify the Contracting Officer of hazard mitigation activities and abatement procedures 14 days prior to disruption to any suspected area.

J-B-20 PCB MANAGEMENT

Polychlorinated Biphenyls (PCB) wastes may include, but are not limited to, oil-filled transformers, Oil-contaminated transformer concrete pads, light ballasts, capacitors, electric motors, pumps and paint coatings. PCB wastes shall be managed in accordance with 40 CFR 761. PCB waste management and disposal shall be coordinated through the Contracting Officer (CO), a KSC Form 26-551 "Process Waste Questionnaire" (PWQ) and Technical Response Package (TRP) shall be prepared and processed in accordance with article entitled "**Hazardous Wastes**".

Government Assistance – KSC has established procedures for the handling, storage and disposal of PCB contaminated waste streams generated on the Center. To aide with proper compliance of site-specific requirements, the Government will assign a NASA Environmental Point of Contact (EPOC) for each project. The establishment of the NASA provided EPOC in no way relieves the contractor for compliance with requirements defined in 40 CFR 761.

LIQUIDS CONTAMINATED WITH PCBs

PCB containers storing liquid PCBs at concentrations of 50 parts per million (ppm) or greater shall be removed from the generator accumulation site within **24 hours** from the date the PCB item was removed from service. This support shall be coordinated through the Contracting Officer for waste pickup scheduling **before** removal from service. The Contractor shall contact the Contracting Officer for pick-up and removal of all PCB related waste. The Contractor shall not remove any oil filled transformers from KSC. Unless analysis results determine PCB content in oil less than 2 ppm, the contractor shall coordinate any disposal of liquid PCBs through the Contracting officer.

For Equipment containing PCB concentration in OIL >= 500 ppm

LIQUIDS: Drained oil must be stored in a DOT approved container and marked with a PCB label (with the date the equipment was removed from service). Containerized liquid PCB waste must be moved to PCB storage facility **immediately (within 24 hrs).** Coordinate effort through EPOC - 5 day notice prior to removal from service is required.

CARCASS or CONTAINER: Drained equipment must be marked with a PCB label (with the date the equipment was removed from service), stored on an impervious surface, covered from rain, and moved offsite within 30 calendar days.

For Equipment containing PCB concentration in OIL >50 ppm but < 500 ppm

LIQUIDS: Drained oil must be stored in an adequate container on an impervious surface, covered from rain, labeled, and moved offsite within 14 calendar days.

CARCASS or CONTAINER: Drained equipment must be stored on an impervious surface, covered from rain, labeled with PCB mark , dated and moved offsite as soon as practicable (not to 180 exceed days). If carcass paint is analyzed for PCBs and results < 50 ppm - No storage, marking, or dating requirement are required under TSCA regulations. Provide analysis results to RRMF along with KSC 7-49 form to recycle.

PCB BULK PRODUCT WASTE (SOLIDs)

PCB Bulk Product Waste is defined in 40 CFR 761.3 as waste derived from manufactured products containing PCBs in a non-liquid state at any concentration, where the concentration of PCBs at the time of designation for disposal is greater than or equal to (≥)50 ppm. The contractor shall dispose of all coated waste with a PCB concentration over the 50 ppm limit in the Schwartz Road landfill (see Schwartz Road Landfill Article). NASA requires all contractors generating metal-based waste containing PCB contaminated coatings with PCBs ≤50 ppm to recycle this material (see Recycling and Salvaging Article).

If these materials cannot be recycled due to excessive cost in segregation or handling, the contractor shall dispose of this waste in the same manner as PCB Bulk Product Waste.

All protective coatings that contain PCB shall be handled in accordance with the requirements of this section. Where Material Safety Data Sheets for protective coatings are available and indicate the presence of PCBs, sampling is not required. Where the presence of PCBs is not determined before work begins, PCBs shall be assumed to be present.

The following waste generator standards will be used for the accumulation and storage of PCB waste materials:

a. PCB wastes listed below may be stored temporarily at a waste generator accumulation site for up to thirty (30) days from the date removed from service. The container and labeling shall comply with the TRP. The date the PCB item was removed from service shall be marked on the container label per the TRP.

(1.) Non-leaking articles and equipment. PCB articles are manufactured articles containing PCBs whose surfaces have been in direct contact with PCBs. These articles include capacitors, transformers, electric motors, and pumps.

(2.) Leaking articles and equipment placed in non-leaking PCB containers with sufficient materials to absorb any liquid PCBs remaining in the item. PCB containers are any devices used to contain PCBs or PCB articles whose surfaces have been in direct contact with PCBs.

(3.) PCB containers storing non-liquid PCB wastes such as contaminated soil and debris.

b. PCB containers storing liquid PCBs at concentrations of 50 parts per million (ppm) or greater shall be removed from the generator accumulation site to the PCB Storage Building (K7-115) within 24 hours from the date the PCB item was removed from service. Support shall be coordinated through designated KSC Waste Management personnel for waste pickup before removal from service date to allow for waste pickup scheduling and to avoid regulatory violations. The Contractor shall contact KSC Waste Management for pick-up and removal of hazardous/PCB waste. Documentation including the waste type, quantity, locations, and organization responsible for the waste shall be provided on KSC Form 28-809 “Waste Support Request” to KSC Waste Management when requesting waste disposal. The Contractor shall fax the waste support request to KSC Waste Management at fax 867-9466.

The Contractor shall not remove any oil filled transformers from KSC. The Contractor shall only take drained transformers to the Reutilization, Recycling and Marketing Facility (RRMF) (M6-1671) at Ransom Road. Within the six (6) month period prior to delivery to RRMF, transformers shall have an oil analysis showing PCB content. At the request of the Contractor, the CO will arrange for all sampling and testing to determine the proper handling and disposal of the transformers. If the oil sample is greater than 500 ppm, the transformer shall be removed as a hazardous/PCB waste. Within 48 hours of having the transformer ready for disposal, the Contractor shall contact the EPOC assigned to the project to coordinate with KSC Waste Management for pick-up and removal of hazardous/PCB waste. Documentation including the waste type, quantity, locations, and organization responsible for the waste shall be provided on KSC Form 28-809 “Waste Support Request” to KSC Waste Management when requesting waste disposal. The EPOC shall fax the waste support request to KSC Waste Management at fax 867-9466. At the request of the Contractor, the EPOC will arrange for all sampling and testing to determine the proper handling and disposal of the stained or painted concrete. Lab analysis that is older than 6 months will not be considered valid analysis and re-sampling must be completed.

J-B-21 RECYCLING AND SALVAGING MATERIALS

The Contractor shall divert all of the following Construction and Demolition (C&D) waste items from the list below from disposal at landfills and incinerators to facilitate their recycling or reuse. The Contractor shall require all subcontractors, vendors, and suppliers to participate in this effort.

GOVERNMENT PROPERTY

All items or materials designated below to be salvaged shall remain the property of the Government and will be cleaned of non-salvable debris, segregated, itemized, delivered, and off-loaded by the Contractor at the disposal area. Scrap metal will be treated as salvage. The Contractor shall maintain adequate property control records for all materials or equipment specified by the contract to be salvaged. These records may be in accordance with the Contractor's system of property control if approved by the CO. The Contractor shall be responsible for adequate storage and protection of salvaged materials and equipment pending delivery to the disposal area.

CONTRACTOR PROPERTY

All materials and real property items identified below shall become property of the contractor at the NTP. The Contractor may, at his discretion, assume ownership of and recycle all other Construction and Demolition Debris that has not been identified for salvage in the Contract Documents, or has otherwise been designated as Government property. All recyclable material obtained by the Contractor for recycling shall be removed from the

Kennedy Space Center and recycled; it shall not be stockpiled at the Kennedy Space Center. The Contractor shall assume ownership of these recyclable materials once they are transported off of the Kennedy Space Center.

☒ METALS: ALUMINUM, BRASS, COPPER, REBAR, STAINLESS STEEL, STEEL, OTHER FERROUS, OTHER NON-FERROUS, SCRAP METAL

All metals coated with non-liquid PCB paints with levels below 50 parts per million shall be recycled by the contractor. Any metals coated with non-liquid PCB paints with levels above 50 ppm shall utilize the Schwartz Road Landfill after Government approval.

REPORTING REQUIREMENT

The Contractor shall record C&D waste materials on the "Construction & Demolition Projects Report", KSC Form 7-648 NS (02/07) and submit the form on a monthly basis and keep log on site per direction of the Contracting Officer (CO).

J-B-22 PERMIT REQUIREMENTS

No on-site work will be allowed until the appropriate State and Federal issuing agencies issue all required permits. The government is responsible for obtaining and providing all required permits except as specified below. Permits required may include, but are not limited to, air construction, dewatering, borrow pit, potable water, sanitary sewer, stormwater, National Pollutant Discharge Elimination System (NPDES) and wetlands.

The following permits are known to be required for this project (fill in or state none):

Water

Wastewater

The Contractor is responsible for obtaining the following permits, if required, before beginning work on the subject systems: FDEP/Brevard County Onsite Sewage Treatment and Disposal System Construction/Permit Abandonment and the FDEP/Brevard County Well Construction/Abandonment Permit. The Contractor shall comply with the terms and conditions of these permits. The Contractor shall provide copies of these permits as well as copies of all documentation submitted as part of the application process to the **NASA Environmental Assurance Branch (EAB), TA-B1B** through the Contracting Officer (CO) as delineated in contract documents or as directed by the CO.

The Contractor shall not begin construction before receiving all Federal, State, and local construction permits as indicated in this section. Included in adherence thereto is

compliance with all conditions of the permit as well as requirements given in the laws, ordinances, and regulations. The Contractor shall be responsible for payment of any fines from government agencies resulting from the Contractor's failure to adhere to all identified permit conditions and agency regulations. These shall include, but are not limited to, material and construction standards, environmental protection, certifications, notifications, and monitoring requirements.

Upon issuance of the Notice to Proceed, the CO shall make copies of all Government provided permits with conditions related thereto available to the Contractor. The Contractor shall keep copies of the permits and related materials such as drawings.

J-B-23 HAZARDOUS WASTES

Hazardous and controlled waste shall be managed in accordance with all applicable statutes, rules, orders, and regulations which may include but are not limited to 40 CFR Parts 260 - 268, 273, 279, 761 and KNPR 8500.1 KSC Environmental Requirements. All hazardous waste generated during the execution of this contract shall be disposed of by the Government. Unless directed by the Contracting officer, in no case shall the Contractor or the Contractor’s representative transport hazardous waste from KSC.

The Contractor shall be responsible for identifying processes and operations and the location and nature of all potentially hazardous and controlled waste and their containers, as defined in 40 CFR Parts 261, 273, 279, or 761. KSC has established policies and procedures in place to assist the contractor for characterization, handling and storage of wastes generated on KSC. Any request for assistance shall be in writing and submitted to the Contracting officer.

Contractor personnel generating and managing the waste shall have hazardous waste training per 40 CFR 265.16. The Contracting Officer may at any time during the course of the contract performance period require the Contractor to provide individual training records for any employee involved in the performance of this contract, and the contents of the course or courses completed to satisfy the training requirements. Attendance at KSC Training Course QG-211 "Hazardous Waste Management" will satisfy the above training requirements.

The Contractor shall prepare copies of Material Safety Data Sheets (MSDS) for each material utilized on the project and provide copies to the Contracting Officer (CO) thirty (30) days before the start of the waste generation process. No substances shall be delivered to KSC without the appropriate Material Safety Data Sheets.

GOVERNMENT ASSISTANCE

KSC has established procedures for the handling, storage and disposal of hazardous waste. To aide with proper compliance of site-specific requirements, the Government will assign a NASA Environmental Point of Contact (EPOC) for each project. The EPOC shall, upon request, assist with waste hazard determination, packaging, labeling, and disposal requirements for waste generated on KSC. The establishment of the NASA EPOC in no way relieves the contractor for compliance with requirements defined in 40 CFR Parts 261, 273, 279, or 761.

WASTE CONTAINERS

The Government will provide DOT compliant storage containers and labels upon request. The Contractor shall request the storage containers, by providing quantity and type needed, in writing to the Contracting Officer a minimum of one week before the required need date. The containers will be available for pickup by the Contractor at a location designated by the Contracting Officer. For projects that will be generating large quantities of waste (>500 gallon or 75 cu ft), a two week notice must be provided to the CO to ensure availability of waste containers. The Contractor shall be responsible for transporting the containers from storage location to the project site.

SATELLITE WASTE ACCUMULATION AREA (SAA)

The Contractor shall establish an on-site Satellite Waste Accumulation Area within 50 feet (ft) of and within sight of any point where hazardous or controlled wastes may be generated. If a Satellite Waste Accumulation Area must be more than 50 ft from the point of generation, or out of sight of the generator, the Contractor shall provide a written request to the CO fourteen (14) days before the start of the waste generating process. The CO will send a notification to the NASA Environmental Assurance Branch (EAB), TA-B1B, for their review and concurrence. The EAB will then request approval for a non-routine Satellite Waste Accumulation Area from Florida Department of Environmental Protection. The Contractor shall not place the Satellite Waste Accumulation Area in service before receiving written approval of the variance from the CO. The Contractor shall store potential or identified hazardous and/or controlled wastes in the appropriate properly labeled containers inside the Satellite Waste Accumulation Area in accordance with KNPR 8500.1 (as revised).

UNKNOWN WASTES

If during the course of the project unidentified waste is discovered by the contractor or subcontractors, the contractor shall immediately contact the Contracting Officer and handle

the waste as hazardous. The contractor shall not attempt to move, open or test any unknown commodities.

If a hazardous/nonhazardous waste determination cannot be made by process knowledge and no MSDS is available for the waste stream, the container of waste shall be marked with a Hazardous Waste Determination In Progress (HWDIP) label until chemical analysis is completed. At the request of the Contractor, the CO and EPOC will provide any analytical support required by the TRP. The EPOC will arrange for all sampling and testing of potentially hazardous or controlled waste.

If the material is hazardous, the analysis completion date serves as the accumulation start date (ASD). Waste streams labeled with HWDIP labels are a potentially hazardous waste stream; therefore they must be managed as a hazardous waste. In order to fulfill this requirement, the generator shall manage those containers in a Satellite Waste Accumulation Area or 90-day storage area. HWDIP waste generated in amounts less than 55 gallons may be managed as a satellite container. If HWDIP waste is generated in amounts greater than 55 gallons, the additional volume must be moved within 72 hours to a 90-day storage site.

UNIVERSAL WASTES (UW)

For Items meeting the definition of UW, the Contractor shall handle, collect and manage in accordance with 40 CFR 273 and Chapters 62-730 and 62-737 FAC. The EPA established Universal Waste regulations to ease the requirements for managing hazardous wastes that can be recycled. Waste streams currently adopted by the State for management as UW are rechargeable batteries, mercury-containing lamps and devices, capacitors, and certain pesticides.

The Contractor's representative or "Handler" of UW shall be trained for the proper waste handling and emergency response procedures. Attendance at the KSC training course QG-299 "Universal Waste Rule" will satisfy the above. The Contractor shall provide to the CO training records of any "handler" of UW upon request of the CO.

J-B-24 ABRASIVE BLASTING AND PAINTING

To the maximum extent possible, abrasive blasting and painting shall be performed before materials are delivered to KSC. A National Association of Corrosion Engineers (NACE) inspection report shall be provided to the Contracting Officer (CO) one (1) week prior to delivery of hardware painted offsite. Where field operations at KSC/CCAFS are required by contract documentation, the Contractor shall perform the operations in accordance with the following:

a. Abrasive Blasting - Operations for paint/coating removal or other corrosion control activities involving the use of abrasive blasting to prepare surfaces shall not be allowed to contaminate soil or surface waters. To ensure this, the Contractor shall do the following:

1. Provide tarpaulin drop cloths, windscreens, and other means necessary to enclose abrasive blasting operations to confine and collect dust, abrasive, agent, paint chips, and other debris.
2. Collect, sample and dispose of in accordance with paragraph “b” all material removed and/or generated, including coating materials and blast media.
3. Protect storage areas for blast media and blast debris from the natural elements to prevent contamination.

Exterior Painting - When painting exterior surfaces, the Contractor shall implement measures in the paint application process to minimize the amount of overspray that is created on a project. Drop cloths or similar containment shall be used to prevent paint from coating ground surfaces.

The Contractor shall implement measures to contain any overspray that may be generated as a result of a painting operation. The Contractor shall also implement measures to prevent rainfall and runoff from contacting items such as painting supplies, paint equipment, empty paint cans, etc., which may have paint residue in or on them.

The contractor shall take precautions to protect all Government hardware from contamination or damage during sandblasting and painting operations. The Contracting Officer or representative shall approve the method of protection. The contractor shall be responsible for any and all claims arising from painting or overspray or overblasting. In addition, the contractor shall be responsible for any repairs to damaged property, and for the collection, removal and disposal of the oversprayed or overblasted materials. The Government will make no additional payments for overspraying or overblasting by the Contractor.

Use of Water - The process of preparing certain surfaces, mainly the exteriors of buildings and structures, before the application of surface coatings may incorporate the use of water. These preparation activities include, but are not limited to removing dirt, mold, and mildew before painting (general surface cleaning); using pressurized water to remove

coatings (water blasting); and using blast media to remove paint/coatings along with water as a dust inhibitor (wet blasting).

Operations using water shall be performed with either plain potable water or potable water with biodegradable, phosphate-free detergents and/or low concentration (≤ 5%) sodium hypochlorite (bleach), calcium hypochlorite, or hydrogen peroxide.

All material removed and/or generated, including coating materials, water, and blast media, shall be collected for proper disposal. All material removed during water blasting operations will be collected, sampled, and disposed of in accordance with paragraph "b". Liquids may be separated from the solid debris by screening the material collected with a 40-micron (or finer) filter mesh.

b. The Contractor shall handle and disposed of all waste containing any hazardous materials in accordance with article entitled "Hazardous Wastes." The Contractor shall dispose of all waste containing nonhazardous materials in accordance with article entitled "Landfill Operations/Solid Waste Removal."

c. All abrasive blasting and painting shall be inspected by a Contractor provided NACE inspector to verify compliance with the contract documentation. The inspector's reports shall be provided to the Contracting Officer at the end of each week in which the blasting and/or painting has been performed at KSC. The report shall include information that clearly defines the extent (starting and end points) of work performed during each week

J-B-25 TURBIDITY & EROSION CONTROL

The Contractor shall prevent the discharge of sediment into drainage ditches, canals, streams, rivers or lakes due to construction operations. Precautions must be made to eliminate or reduce to the greatest extent possible any discharge of soil outside established project boundaries. Installation and maintenance of silt fences must be completed prior to initial land disturbance, and the screens must be maintained so they remain functional until such time that the newly exposed soils are stabilized with sod or natural vegetation. Approved erosion control devices shall be installed to prevent discharge of sediment into any dry or wet watercourse. Erosion control shall consist of anchored hay bales, mulch and netting, filter cloth barriers or other erosion control methods specified within the

contract documents and approved by the Contracting Officer. Stockpiled fill material shall not be stored in a manner which allows runoff into any watercourse.

J-B-26 ASBESTOS CONTAINING BUILDING MATERIALS

Asbestos Containing Materials (ACM) are known to be present in facilities and or structures assigned under the scope of this contract. The Government will provide information regarding the location and quantity of known ACM in the facilities under this contract to the Contractor through the Contract Documents.

The contractor shall employee asbestos abatement contractors licensed by the State of Florida in accordance with Florida Statute 469 Asbestos Abatement. This documentation must be available onsite and shall be provided to the Government or Government representative upon request.

The Contractor shall abate all RACM as shown or specified in the contract documents and shall notify the Contracting Officer if any undocumented ACM or suspected ACM is encountered. The Contractor shall provide a written Asbestos Management and Abatement Implementation Plan which is consistent with the requirements of Federal and State regulations. These regulations include the Occupational Health and Safety Administration (OSHA) regulation 29 CFR 1926.1101, the Code of Federal Regulations (CFR) National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 61 Subpart M, the Florida Administrative Code (FAC) requirements FAC 62-257, and the Florida Statute (F.S.) 469 Asbestos Abatement and F.S. 376.60 Asbestos Removal Program Inspection and Notification Fee.

If more than 260 linear feet, 60 square feet or 1 cubic meter of RACM is to be removed, or any load-bearing structure is to be demolished regardless of whether or not asbestos is present, the Contractor shall submit to the Florida Department of Environmental Protection (FDEP) a “Notice of Asbestos Renovation and Demolition Form” (DEP Form 62-257.900(1). This notice shall be submitted two (2) weeks before demolition. A copy of the notification shall be provided to the Contracting Officer (CO) and the NASA Environmental Assurance Branch (EAB), TA-B1B. This notice shall be submitted for asbestos abatement and/or demolition of any load-supporting structural member. The State asbestos removal program requirements of F.S. 376.60 and the renovation or demolition notice requirements of the NESHAP 40 CFR Part 61, Subpart M, as embodied in FAC 62-257 are included on this form. If a project will disrupt construction materials in any way, the Contractor shall complete an asbestos survey. If it is unknown if ACM exist, the Contractor shall contact the

COTR to complete a Support Request (KSC Form 19-15) to have KSC Environmental Health provide an asbestos survey.

Asbestos materials must be handled, packaged, labeled and disposed of per EPA 40 CFR 61 and OSHA Construction Standards 29 CFR 1926.1101. All regulated asbestos waste shall be disposed of at the Brevard County Landfill located on Adamson Road in Cocoa, Florida. Non-friable asbestos can be disposed of at the KSC Schwartz Road Landfill in accordance with Environmental Procurement Clause "Schwartz Road Landfill Operations."

J-B-27 HAND EXCAVATION

Contractor shall hand dig a pilot trench to locate existing utilities before motorized equipment is used. Excavation in areas within 5 feet of all existing utilities shall be by hand.

J-B-28 GOVERNMENT PROPERTY TO BE INSTALLED BY THE CONTRACTOR

In association with the work to be performed under this contract, the Government will provide the property identified below to be installed by the contractor. The property will be provided by the Government within __30__ days after issuance of the notice to proceed:

Description	Quantity	Estimated Value	Condition
MV-105 Power Cable – 1/C 15kV 133% EPR 350 KCMIL Cable	150 Feet	$21/ft	NEW
AWG 2/0	50 Feet	$10/ft	New
AWG 4/0	1,000 Feet	$13/ft	New

J-B-29 TRAFFIC CONTROL REQUIREMENTS

(a) Standards:

U.S. Department of Transportation Federal Highway Administration Manual (latest edition), on uniform Traffic Control Devices for Streets and Highways, Part II, Signs for Traffic Controls for Street and Highway Construction, Maintenance, Utility and

Emergency Operations, set forth the basic principles and prescribes minimum standards to be followed in the design, application, installation, maintenance and removal of all traffic control devices and all warning devices and barriers which are necessary to protect the public and workmen from hazards within the project limits. The standards established in the aforementioned manual constitute the requirements for normal conditions, and additional control devices, warning devices, barriers or other safety devices will be required where unusual, complex or particularly hazardous conditions exist.

(b) Traffic Control Devices, Warning Devices and Barriers:

(1) The responsibility for installation and maintenance of adequate traffic control devices, warning devices, and barriers, for the protection of the traveling public and workman, as well as to safeguard the work area in general shall rest with the contractor. The required traffic control devices, warning devices and barriers shall be erected by the Contractor prior to creation of any hazardous condition and in conjunction with any necessary rerouting of traffic. The Contractor shall immediately remove, turn, or cover any devices or barriers which do not apply to the existing conditions.

(2) The Contractor shall make the Contracting Officer aware of any scheduled operation which will affect traffic patterns or safety, sufficiently in advance of commencing such operation to permit his review of the plan for installation of traffic control devices, warning devices, or barriers proposed by the contractor.

(3) The Contractor shall assign one of his employees the responsibility of maintaining the position and condition of all traffic control devices, warning devices, and barriers through the duration of the contract. The Contracting Officer shall be kept advised at all times as to the identification and means of contacting this employee on a 24 hour basis.

(4) Maintenance of Devices and Barriers: Traffic Control devices, warning devices, and barriers shall be kept in the correct position, properly directed, clearly visible and clean, at all times. Damaged, defaced, or dirty devices or barriers shall immediately be repaired replaced, or cleaned as required per the request of the Contracting Officer.

(c) Flagmen:

The Contractor shall provide competent flagmen to direct traffic in situations as may be required by the standards established in the paragraph above.

(d) Traffic Control Plan:

(1) After contract award but prior to Notice to Proceed, the Contractor shall submit a traffic control plan to the Contracting Officer for approval. No work will be allowed on bridges or right-of-way of roads between the hours of 6:00 AM to 8:00 AM and 3:00 PM to 5:00 PM.

(2) The Contractor may request work time during off shift and weekends in order to meet construction schedules.

(3) The Traffic Control Plan will be updated by the Contractor on a weekly basis in order to provide a current plan for the job and make adjustments to the Contractor's work. The updated Traffic Control Plan shall be presented at the Weekly Status Meeting.

(e) Traffic Flow Requirements:

The Contractor shall keep one lane open at all times during road modifications. Any trench or hole created in a roadway shall be backfilled to finish roadway elevation or effectively covered to support vehicle loads prior to allowing any traffic to flow over it. No roads will be blocked during peak hours of traffic; no road work shall start before 8:00 am or continue past 5:00 pm, Monday through Friday unless otherwise approved by the Contracting Officer.

J-B-30 BIOLOGICAL SURVEYS

The Contractor shall notify the Contracting Officer (CO) to request that NASA **EAB** perform a biological survey, fourteen (14) days prior to start of work. The Contractor shall not begin land clearing or site disturbance activities, including exterior lighting and roof work, before receiving written approval from the CO stating that the biological survey is completed and all mitigation action (e.g. Threatened and Endangered (T&E) species relocation/protection, identification and protection of plant species of special concern) to be performed by the Government or Contractor has been completed.

J-B-31 STORMWATER POLLUTION PREVENTION

The Contractor shall be responsible for providing stormwater pollution prevention measures, including erosion and sediment controls, in accordance with Federal and State Regulations. The pollution prevention measures selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The Contractor shall construct or install temporary and permanent erosion and

sediment control best management practices (BMPs) as indicated on the contract drawings and as necessary to minimize environmental damage and maintain compliance with regulatory requirements. The Contractor shall also abide by any and all NPDES Construction Stormwater and Environmental Resource Permits obtained for the specific project.

A NPDES permit is required for all activities that disturb greater than one (>1) acre of land. A NPDES permit is not required for activities that disturb less than or equal to one (≤1) acre of land; however, the Contractor shall implement erosion control BMPs during construction.

J-B-32 STORMWATER POLLUTION PREVENTION PLAN

The Contractor shall be responsible for providing stormwater pollution prevention plan which contains pollution prevention measures, including erosion and sediment controls, in accordance with Federal and State Regulations. The SWPPP must be submitted to the Government 14 days prior to any land disturbance. The Contractor shall abide by any and all NPDES Construction Stormwater and Environmental Resource Permits obtained for this project.

J- B-33 SOLID WASTE

The Contractor shall be responsible for the proper management of all solid waste generated at the Kennedy Space Center from the execution of this contract. The Contractor shall segregate and transport all solid waste to disposal locations designated in the Contract Documents. The Contractor shall police work areas daily for loose trash and debris. The Contractor shall collect and properly dispose of wind-blown debris daily to prevent migration of debris/trash offsite.

Trash items not requiring special handling, or which cannot be resold or recycled, shall be disposed of in receptacles slated for disposal in either the KSC Landfill or the Brevard County Landfill. The Kennedy Space Center has numerous policies and processes in place to properly categorize, handle, store and dispose of waste streams generated during the project. It is the contractor's responsibility to make every effort to reduce the impact of the project on the environment. This includes utilizing all practical means to reduce the amount of waste that is landfilled or incinerated.

J- B-34 NASA EMPLOYEE ACCESS, ENTRANCES AND WALKWAYS

Contractor shall take steps to maintain full and open access to the existing facilities at all times for Government Employees. Construction and demolition work that will impact the exterior of the work area (adjacent walkways, parking, etc.) shall be clearly identified in all adjacent areas that work is taking place above or near this location.